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09/989,937	11/20/2001	William C. Black	X-933 US	1537
24309	7590	06/14/2006	EXAMINER	
XILINX, INC ATTN: LEGAL DEPARTMENT 2100 LOGIC DR SAN JOSE, CA 95124			WARE, CICELY Q	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/989,937

Applicant(s)

BLACK, WILLIAM C.

Examiner

Cicely Ware

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-14 and 16-25 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5, 7-14 and 16-25 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 29 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement (IDS) submitted on 3/29/2006 was filed after the mailing date of the Non-Final Rejection on 12/28/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### *Response to Arguments*

2. Applicant's arguments with respect to claim 18 filed 3/29/2006 have been fully considered but they are not persuasive. On Pg. 6 of applicant's **REMARKS**, applicant asserts that "Adam's abstract is completely silent as to the teaching of the use of a printed circuit board generally, and more particularly, Adam's abstract seems to be silent as to a specific teaching of the use of a printed circuit board to provide the connection medium between amplifier 18 and device 14".

Examiner disagrees. Examiner asserts that in reference to Fig. 3 of applicant's submitted drawings it can be seen that the elements are implemented on a printed circuit board. Examiner asserts that it is inherent that Adam's abstract references a circuit which means that his embodiments are implemented on a printed circuit board. Therefore the rejection to claim 18 stands.

3. Applicant's arguments, see **REMARKS**, filed 3/29/2006 with respect to the rejection(s) of claim(s) 1-5, 7-14 and 16-25 under 35 USC 103(a) have been fully

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considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of Erhart et al. (US Patent 5,440,256).

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Adam (US Patent 3,939,437).

With regard to claim 18, Adam discloses in (Figs. 1, 2, 3 and 4) a printed circuit board (abstract); a first device having an input (14); a second device having an output (16); an amplifier (18) having an input and an output, wherein the input of the amplifier is coupled to an output of the second device (16) and the output of the amplifier is coupled to the input of the first device (14) via the printed circuit board; and a feed-forward circuit (26) in parallel with said amplifier (18) (col.1, lines 63-68 – col. 2, lines 1-6, col. 4, lines 31-34).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seidel (US Patent 3,763,437) (previously cited) in view of Erhart et al. (US Patent 5,440,256), in further view of Anderson (US Patent 5,493,246).

(1) With regard to claim 1, Seidel discloses in (Fig. 2) an amplifier having an output impedance (28), wherein the amplifier sources a transmission line (col. 1, lines 10-11, 15-23, 42-43, col. 3, lines 18-21, 23-30, 42-48, 65-67, col. 4, lines 1-2).

However Seidel does not disclose a feed-forward circuit in parallel with said amplifier wherein the feed-forward circuit compensates for transmission characteristics of the transmission line wherein said feed-forward circuit further comprises wherein said feed-forward circuit further comprises a plurality of switched capacitors in parallel with each other, wherein each one of the switched capacitors includes a capacitor in series with a switch and at least one of said plurality switch capacitors is selectable based on a desired capacitance value to be placed in parallel with said output impedance.

However Erhart et al. discloses in (Fig. 2) a feed-forward circuit (212) in parallel with said amplifier (204) wherein the feed-forward circuit compensates for transmission characteristics of the transmission line (col. 1, lines 29-37, 50-68, col. 3, lines 6-46).

Therefore it would have been obvious to one of ordinary skill in the art to modify Seidel in view of Erhart et al. to incorporate a feed-forward circuit in parallel with said amplifier wherein the feed-forward circuit compensates for transmission characteristics of the transmission line in order to provide an active matrix driver chip which is capable of driving large resistive/capacitance loads in a very short time period while simultaneously holding a particular voltage with extreme accuracy and without sacrificing quiescent current (Erhart et al., col. 1, lines 43-48).

However Seidel in combination with Erhart et al. do not disclose wherein said feed-forward circuit further comprises wherein said feed-forward circuit further comprises a plurality of switched capacitors in parallel with each other, wherein each one of the switched capacitors includes a capacitor in series with a switch and at least one of said plurality switch capacitors is selectable based on a desired capacitance value to be placed in parallel with said output impedance.

However Anderson discloses in (Fig. 1 (12) and Fig. 2)) wherein said feed-forward circuit further comprises wherein said feed-forward circuit further comprises a plurality of switched capacitors in parallel with each other, wherein each one of the switched capacitors includes a capacitor in series with a switch and at least one of said plurality switch capacitors is selectable based on a desired capacitance value to be placed in parallel with said output impedance (col. 2, lines 30-39).

Therefore it would have been obvious to one of ordinary skill in the art to modify Seidel in combination with Erhart et al. in view of Anderson to incorporate wherein said feed-forward circuit further comprises wherein said feed-forward circuit further

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comprises a plurality of switched capacitors in parallel with each other, wherein each one of the switched capacitors includes a capacitor in series with a switch and at least one of said plurality switch capacitors is selectable based on a desired capacitance value to be placed in parallel with said output impedance in order to provide flexibility in connecting a variety of cells to achieve the desired function (Anderson, col. 2, lines 34-35).

(2) With regard to claim 10, claim inherits all the limitations of claim 1. Seidel further discloses in (Fig. 2) a data processing module (25) having an output; an amplifier (24) having an input coupled to the output of the data processor, and an output; and a feed-forward circuit (10, 11) having an input coupled to the output of the data processing module and an output coupled to the output of the amplifier (Table X, col. 1, lines 10-11, 15-23, 42-43, col. 3, lines 18-21, 23-30, 42-48, 65-67, col. 4, lines 1-2).

4. Claims 2-5, 7-9, 11-14, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seidel (US Patent 3,763,437) (previously cited) in view of Erhart et al. (US Patent 5,440,256), in view of Anderson (US Patent 5,493,246) as applied to claims 1 and 10, in further view of O'Neil et al. (US Patent 3,886,470).

(1) With regard to claim 2, claim 2 inherits all the limitations of claim 1. However Siedel in combination with Erhart et al. in combination with Anderson do not disclose wherein said feed-forward circuit further comprises a capacitor, wherein a capacitance value of said capacitor is determined at least in part by a data transition rate.

However O'Neil et al. discloses wherein said feed-forward circuit further comprises a capacitor, wherein a capacitance value of said capacitor is determined at least in part by a data transition rate (Fig. 2 (54), col. 5, lines 41-54).

It is well known in the art that a shunt capacitance is a variable capacitance that inherently varies with some type of analysis depending on design choice.

Therefore it would have been obvious to one of ordinary skill in the art to modify Siedel in combination with Erhart et al. in combination with Anderson in view of O'Neil et al. to incorporate said feed-forward circuit further comprising a capacitor, wherein a capacitance value of said capacitor is determined at least in part by a data transition rate to provide a small correction to the phase characteristic of the delay path whose dominant effect occurs at low frequencies (O'Neil et al., col. 5, lines 46-48).

(2) With regard to claim 3, claim 3 inherits all the limitations of claim 1. O'Neil et al. further discloses in (Fig. 2) wherein said feed-forward circuit (54-22), further comprises a capacitor (56), wherein a capacitance value of said capacitor is determined based at least in part on a characteristic of a transmission medium to which said output interface is electrically coupled (col. 5, lines 41-54).

(3) With regard to claim 4, claim 4 inherits all the limitations of claim 1. O'Neil et al. further discloses in (Fig. 2) wherein said feed-forward circuit (11-22) further comprises an amplifier (12) in series with a capacitor (56).

(4) With regard to claim 5, claim 5 inherits all the limitations of claim 1. O'Neil et al. further discloses in (Fig. 2) wherein said feed-forward circuit (11-22) further comprises a resistive element (52) in series with a capacitor (56).



(5) With regard to claim 7, claim 7 inherits all the limitations of claim 1. See rejection of claim 3.

(6) With regard to claim 8, claim 8 inherits all the limitations of claim 7. Anderson further discloses wherein the feed-forward control module further comprises a plurality of user selectable switches (col. 2, lines 30-39).

(7) With regard to claim 9, claim 9 inherits all the limitations of claim 7. Anderson further discloses wherein the property is one of a capacitance value and a resistance value (col. 2, lines 30-39).

(8) With regard to claim 11, see rejection of claims 10 and 2.

(9) With regard to claim 12, see rejection of claims 10 and 3.

(10) With regard to claim 13, see rejection of claims 10 and 4.

(11) With regard to claim 14, see rejection of claims 10 and 5.

(12) With regard to claim 16, claim 16 inherits all the limitations of claim 10. See rejection of claim 3.

(13) With regard to claim 17, claim 17 inherits all the limitations of claim 16. See rejection of claim 8.

5. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adam (US Patent 3,939,437) as applied to claim 18, in view of O'Neil et al. (US Patent 3,886,470).

(1) With regard to claim 19, claim 19 inherits all the limitations of claim 18.

However Adam does not disclose wherein said feed-forward circuit further comprises a capacitor, wherein a capacitance value of said capacitor is determined at least in part by a data transition rate.

However O'Neil et al. discloses wherein said feed-forward circuit further comprises a capacitor, wherein a capacitance value of said capacitor is determined at least in part by a data transition rate (Fig. 2 (54), col. 5, lines 41-54).

It is well known in the art that a shunt capacitance is a variable capacitance that inherently varies with some type of analysis depending on design choice.

Therefore it would have been obvious to one of ordinary skill in the art to modify Adam in view of O'Neil et al. to incorporate said feed-forward circuit further comprising a capacitor, wherein a capacitance value of said capacitor is determined at least in part by a data transition rate to provide a small correction to the phase characteristic of the delay path whose dominant effect occurs at low frequencies (O'Neil et al., col. 5, lines 46-48).

(2) With regard to claim 20, claim 20 inherits all the limitations of claim 18. O'Neil et al. further discloses in (Fig. 2) wherein said feed-forward circuit (54-22), further comprises a capacitor (56), wherein a capacitance value of said capacitor is determined based at least in part on a characteristic of a transmission medium to which said output interface is electrically coupled (col. 5, lines 41-54).

(3) With regard to claim 21, claim 21 inherits all the limitations of claim 18. O'Neil et al. further discloses in (Fig. 2) wherein said feed-forward circuit (11-22) further comprises an amplifier (12) in series with a capacitor (56).

(4) With regard to claim 22, claim 22 inherits all the limitations of claim 18. O'Neil et al. further discloses in (Fig. 2) wherein said feed-forward circuit (11-22) further comprises a resistive element (52) in series with a capacitor (56).

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adam (US Patent 3,939,437) as applied to claim 18, in view of Anderson (US Patent 5,493,246).

(1) With regard to claim 23, claim 23 inherits all the limitations of claim 18. However Adam does not disclose wherein said feed-forward circuit further comprises wherein said feed-forward circuit further comprises a plurality of switched capacitors in parallel with each other, wherein each one of the switched capacitors includes a capacitor in series with a switch and at least one of said plurality switch capacitors is selectable based on a desired capacitance value to be placed in parallel with said output impedance.

However Anderson discloses in (Fig. 1 (12) and Fig. 2)) wherein said feed-forward circuit further comprises wherein said feed-forward circuit further comprises a plurality of switched capacitors in parallel with each other, wherein each one of the switched capacitors includes a capacitor in series with a switch and at least one of said plurality switch capacitors is selectable based on a desired capacitance value to be placed in parallel with said output impedance (col. 2, lines 30-39).

Therefore it would have been obvious to one of ordinary skill in the are to modify Adam in view of Anderson to incorporate wherein said feed-forward circuit further

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comprises wherein said feed-forward circuit further comprises a plurality of switched capacitors in parallel with each other, wherein each one of the switched capacitors includes a capacitor in series with a switch and at least one of said plurality switch capacitors is selectable based on a desired capacitance value to be placed in parallel with said output impedance in order to provide flexibility in connecting a variety of cells to achieve the desired function (Anderson, col. 2, lines 34-35).

7. Claims 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adam (US Patent 3,939,437) in view of Anderson (US Patent 5,493,246) as applied to claim 23, in view of O'Neil et al. (US Patent 3,886,470).

(1) With regard to claim 24, claim 24 inherits all the limitations of claim 23. Adam in combination with Anderson disclose all the limitations of claim 23. However Adam in combination with Anderson do not disclose a feed-forward control module, coupled to the feed-forward circuit to select a capacitance value of said feed-forward circuit based on at least one characteristic of a transmission medium to which said output interface is electrically coupled.

However O'Neil et al. discloses in (Fig. 2) a feed-forward control module, coupled to the feed-forward circuit (54-22) to select a capacitance value of said feed-forward circuit based on at least one characteristic of a transmission medium to which said output interface is electrically coupled (col. 5, lines 41-54).

Therefore it would have been obvious to one of ordinary skill in the art to modify the inventions of Adam in combination with Anderson in view of O'Neil to incorporate a

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feed-forward control module, coupled to the feed-forward circuit to select a capacitance value of said feed-forward circuit based on at least one characteristic of a transmission medium to which said output interface is electrically coupled in order to produce an feed-forward amplifier system for producing a high output with low distortion and noise across a wide frequency band (O'Neil, abstract).

(2) With regard to claim 25, claim 25 inherits all the limitations of claim 24.

Anderson further discloses wherein the feed-forward control module further comprises a plurality of user selectable switches (col. 2, lines 30-39).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*Cicely Ware*

cqw  
May 11, 2006

  
**KHAI TRAN**  
**PRIMARY EXAMINER**